

wherein the control data enables playback control of the user data, and wherein the control data comprises:

play control data which defines user data items of the user data which are playable;

selection control data for enabling the user to select user data and control reproduction of the selected user data; and

variable control data for operating on user and system variables, wherein the variable control data comprises at least one conditional instruction, wherein each instruction of the at least one the conditional instruction includes an operation code and operands, wherein the operation code includes an operation portion denoting an operation and a condition portion denoting a condition, wherein the operation is to be executed if the condition is TRUE, wherein the operation is not to be executed if the condition is FALSE, and wherein the operation is adapted to be performed in conjunction with at least one of said operands.

10. (NEW) The record carrier of claim 9, wherein the at least one instruction is embedded in a Command List comprising a Command List Header which precedes the at least one instruction, and wherein the Command List further comprises an unconditional goto which points to a next list to be executed following execution of said Command List.

11. (NEW) The record carrier of claim 10, wherein the next list is another Command List.

12. (NEW) The record carrier of claim 10, wherein the next list is not another Command List.

13. (NEW) The record carrier of claim 10, wherein the Command List does not include any other instruction apart from the unconditional goto.

14. (NEW) The record carrier of claim 10,

wherein the play control data is embedded in Play Lists, the Play Lists comprising at least a Play List Header as a first item and at least one Play Item representing playable user data and at least one reference to a further List;

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wherein the selection control data is embedded in Selection Lists, the Selection Lists comprising at least a Selection List Header, at least one reference corresponding to a user selection, the Headers being mutually different; and

wherein the Command List includes a reference to a Play List of the Play Lists or a Selection List of the Selection Lists.

15. (NEW) The record carrier of claim 9, wherein the operation code and operands of each instruction are stored in a contiguous set of bytes.

16. (NEW) The record carrier of claim 9, wherein the at least one instruction includes a plurality of instructions, and wherein the instructions of the plurality of instructions are adapted to be executed in a coordinated fashion in accordance with a computer program based on an algorithm.

17. (NEW) The record carrier of claim 9, wherein the operands in a first instruction of the at least one instruction include indices pointing to elements of an array.

18. (NEW) The record carrier of claim 17, wherein the condition denoted in the first instruction includes a dependence one at least one of said indices.

19. (NEW) The record carrier of claim 17, wherein the operation denoted in the first instruction is an arithmetic operation.

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20. (NEW) The record carrier of claim 19, wherein an index of said indices points to an element E of said array, and wherein the condition is $E > 0$, $E < 0$, or $E = 0$.

21. (NEW) The record carrier of claim 19, wherein a first index of said indices point to a first element E_1 of said array, wherein a second index of said indices point to a second element E_2 of said array, and wherein the condition is $E_1 > E_2$, $E_1 < E_2$, or $E_1 = E_2$.

22. (NEW) The record carrier of claim 17, wherein the operation denoted in the first instruction is a logical operation.

23. (NEW) The record carrier of claim 17, wherein the operation denoted in the first instruction is an assignment operation.

24. (NEW) The record carrier of claim 23, wherein the operands in the first instruction further includes a constant adapted to be inserted by the first instruction into at least one element of said

array.

25. (NEW) The record carrier of claim 17, wherein the operation denoted in the first instruction is a jump operation, wherein a jump adapted to be executed by the jump operation is a jump to a list adapted to be next executed.

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26. (NEW) The record carrier of claim 17, wherein the operation denoted in the first instruction is a wait operation.

27. (NEW) An apparatus for reproducing user data under control of control data, comprising a processor controllable by the control data and a record carrier for storing the user data and the control data in digital form, wherein the user data comprising video data, and wherein the control data comprises:

play control data which defines user data items of the user data which are playable;
selection control data for enabling the user to select user data and control reproduction of the selected user data; and

variable control data for operating on user and system variables, wherein the variable control data comprises at least one conditional instruction, wherein each instruction of the at least one the conditional instruction includes an operation code and operands, wherein the operation code includes an operation portion denoting an operation and a condition portion denoting a condition, wherein the operation is to be executed if the condition is TRUE, wherein the operation is not to be executed if the condition is FALSE, and wherein the operation is adapted to

be performed in conjunction with at least one of said operands.

28. (NEW) The apparatus of claim 27, wherein the processor comprises a single interpreter which is adapted to process the play control data, the selection control data and the variable control data sequentially.

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29. (NEW) The apparatus of claim 27, wherein the at least one instruction is embedded in a Command List comprising a Command List Header which precedes the at least one instruction, and wherein the Command List further comprises an unconditional goto which points to a next list to be executed following execution of said Command List.

30. (NEW) The apparatus of claim 27, wherein the operands in a first instruction of the at least one instruction include indices pointing to elements of an array.

31. (NEW) The apparatus of claim 30, wherein the condition denoted in the first instruction includes a dependence one at least one of said indices.

32. (NEW) The apparatus of claim 30, wherein the operation denoted in the first instruction is an arithmetic operation.

33. (NEW) The apparatus of claim 32, wherein an index of said indices points to an element E of said array, and wherein the condition is $E > 0$, $E < 0$, or $E = 0$.

34. (NEW) The apparatus of claim 32, wherein a first index of said indices point to a first element E_1 of said array, wherein a second index of said indices point to a second element E_2 of said array, and wherein the condition is $E_1 > E_2$, $E_1 < E_2$, or $E_1 = E_2$.

35. (NEW) The apparatus of claim 30, wherein the operation denoted in the first instruction is a logical operation.

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36. (NEW) The apparatus of claim 30, wherein the operation denoted in the first instruction is an assignment operation.

37. (NEW) The apparatus of claim 36, wherein the operands in the first instruction further includes a constant adapted to be inserted by the first instruction into at least one element of said array.

38. (NEW) The apparatus of claim 30, wherein the operation denoted in the first instruction is a jump operation, wherein a jump adapted to be executed by the jump operation is a jump to a list adapted to be next executed.

39. (NEW) The apparatus of claim 30, wherein the operation denoted in the first instruction is a wait operation.

40. (NEW) A method of reproducing user data under control of control data comprising:

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reading the user data and the control data from a record carrier on which the user data and control data are stored in digital form, wherein the user data comprises video data, wherein the control data comprises play control data, selection control data and variable control data, wherein the selection control data enables a user of the method to select and control reproduction of user data items of the user data, wherein the variable control data controls operates on user and system variables, wherein the variable control data comprises at least one conditional instruction, wherein each instruction of the at least one the conditional instruction includes an operation code and operands, wherein the operation code includes an operation portion denoting an operation and a condition portion denoting a condition, wherein the operation is to be executed if the condition is TRUE, wherein the operation is not to be executed if the condition is FALSE, and wherein the operation is adapted to be performed in conjunction with at least one of said operands; and

playing the user data under control of the play control data.

41. (NEW) The method of claim 40, wherein the at least one instruction is embedded in a Command List comprising a Command List Header which precedes the at least one instruction, and wherein the Command List further comprises an unconditional goto which points to a next list to be executed following execution of said Command List.

42. (NEW) The method of claim 40, wherein the operands in a first instruction of the at least one instruction include indices pointing to elements of an array.

43. (NEW) The method of claim 42, wherein the condition denoted in the first instruction includes a dependence one at least one of said indices.

44. (NEW) The method of claim 42, wherein the operation denoted in the first instruction is an arithmetic operation.

45. (NEW) The method of claim 44, wherein an index of said indices points to an element E of said array, and wherein the condition is $E > 0$, $E < 0$, or $E = 0$.

46. (NEW) The method of claim 44, wherein a first index of said indices point to a first element E_1 of said array, wherein a second index of said indices point to a second element E_2 of said array, and wherein the condition is $E_1 > E_2$, $E_1 < E_2$, or $E_1 = E_2$.

47. (NEW) The method of claim 42, wherein the operation denoted in the first instruction is a logical operation.

48. (NEW) The method of claim 42, wherein the operation denoted in the first instruction is an assignment operation.

49. (NEW) The method of claim 48, wherein the operands in the first instruction further includes a constant adapted to be inserted by the first instruction into at least one element of said array.